

**RESPONSE UNDER 37 C.F.R. § 1.111**

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**REMARKS**

**Disposition of Claims:**

Claims 1-30 are all the claims pending in the application and have been rejected.

**Claim Rejections Under 35 U.S.C. § 103:**

Claims 1-30 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Sada (U.S. Patent No. 5,885,690) (hereinafter "Sada"). For the following reasons, Applicant respectfully traverses these rejections.

In rejecting independent claims 1-3, the Examiner asserts that the claimed range of an occupation ratio at a certain depth (i.e., 2  $\mu\text{m}$  in claim 1, 1.5  $\mu\text{m}$  in claim 2, and 1.0  $\mu\text{m}$  in claim 3) would have been obvious for a person having ordinary skill in the art, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering optimum or workable ranges involves only routine skill in the art.

Applicant respectfully disagrees with the grounds of rejection.

Contrary to the Examiner's allegations, Sada is completely silent regarding an occupation ratio at a certain depth.

For example, the rejections rely on col. 3, lines 32-34 and 38-41 of Sada (reproduced below), stating that Sada teaches the "area ratio".

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Referring to FIGS. 1A, 1B and 2, the maximum height  $R_y$  of a roughness profile R extracted from the rolling contact surface 11a is 1 to 3  $\mu\text{m}$ , and the ratio  $R_{PK}/R_y$  of the reduced peak height  $R_{PK}$  to the maximum height  $R_y$  is set to not more than 0.1 and more preferably, not more than 0.05. Further, the ratio of the open area of the very small recesses to the whole area of the rolling contact surface 11a, that is, the area ratio is set to 5 to 20% and more particularly, 5 to 10%. As described later, the inventors of the present application have known that when in the roughness profile R, the maximum height  $R_y$  is 1 to 3  $\mu\text{m}$ , and the relationship of  $R_{PK}/R_y \leq 0.1$  holds with respect to the reduced peak height  $R_{PK}$  and the maximum height  $R_y$ , durability can be reliably improved upon restraining the production of peeling or the like.

However, contrary to the Examiner's allegations, Sada's "area ratio" cannot be equated with the claimed "occupation ratio" at a certain depth. For instance, as described in col. 6, lines 51-55 of Sada (reproduced below), the "area ratio" disclosed in Sada does not even consider a "depth," as claimed.

An image obtained by microscopic observation was analyzed, to measure the ratio of the area occupied by openings of the very small recesses to the area of the rolling contact surface. The results in the respective embodiments were all in the range of 5 to 20%.

In contrast to the claimed features, Sada teaches suppressing the height of the peaks that protrude from a certain level (see e.g., FIGS. 1A and 1B of Sada (reproduced below)).

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FIG. 1A

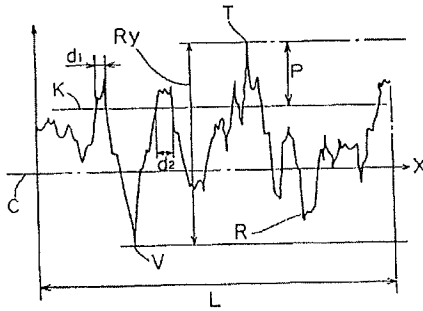
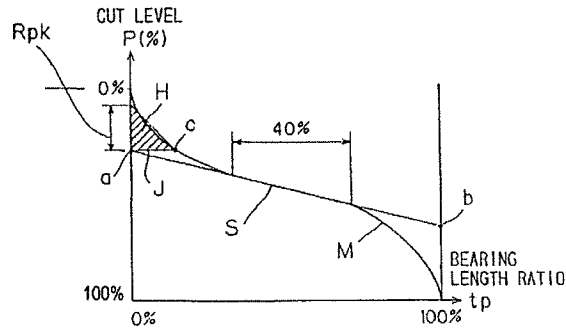


FIG. 1B



That is, Sada teaches  $R_{pk}/R_y \leq 0.1$  (also in claim 1 of Sada), where  $R_{pk}$  is a reduced peak height defined as the mean height of the peaks protruding from the roughness core profile, as explained previously, and  $R_y$  is the maximum height.

In sharp contrast, claims 1-3 recite rolling sliding parts which improve the strength of an oil film using a fundamentally different configuration than that taught in Sada. In particular, as recited in claims 1-3, the occupation ratio at a certain depth is required to be a certain percentage or more but less than 100%. In other words, illustrative embodiments consistent with claims 1-3 provide narrow but deep depressions, which is quite different from Sada's teachings about reduced peak height.

Therefore, since Sada fails to provide any teaching or suggestion regarding the claimed features, it would not have been obvious for a person having ordinary skill in the art to arrive at the features of claims 1-3 in view of Sada for at least these reasons.

Additionally, claim 1 recites (in part):

...wherein an occupation ratio is set from 90% or more to less than 100%,

wherein the occupation ratio is calculated by dividing a sectional area of a virtual plane in a plane direction at a portion that is positioned at a depth of 2.0  $\mu\text{m}$  from the outermost surface

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position by an area of an overall surface of a portion that contacts the other member...

The Examiner acknowledges that Sada fails to teach or suggest the above features (Office Action, p. 2). Nevertheless, the grounds of rejection summarily allege that the above features would have been obvious. The only reasoning articulated to support this conclusory allegation of obviousness is a boilerplate citation to In re Aller, 105 USPQ 233 (C.C.P.A. 1955). Applicant respectfully submits that such rejections are unsupported.

First, rejections on obviousness grounds cannot be sustained by mere conclusory statements like that relied upon by the grounds of rejection.<sup>1</sup> The grounds of rejection summarily allege that the court's holding in In re Aller establishes the obviousness of the above features of claim 1, without substantively applying the court's holding in In re Aller to the facts of the present application. Since the grounds of rejection fail to articulate any reasoning with some rational underpinning (indeed, the grounds of rejection do not articulate any reasoning at all) to support the legal conclusion that In re Aller establishes the obviousness of the claimed features, the grounds of rejection are unsupported for at least these reasons.<sup>2</sup>

Second, Applicant respectfully submits that In re Aller does not support the position for which it is cited by the Examiner and, thus, the grounds of rejection are factually unsupported for *at least* these additional reasons. The Examiner alleges that the above features of claim 1 would have been obvious merely because it has allegedly been

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<sup>1</sup> See KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1741 (U.S. 2007).

<sup>2</sup> *Id.*

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held in In re Aller that “where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art” (Office Action, page 3). However, the Examiner mischaracterizes the holding of In re Aller.

Specifically, In re Aller merely stated that “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.”<sup>3</sup> That is, In re Aller merely suggested that it is not inventive to discover the optimum or workable ranges by routine experimentation alone and does not stand for a *per se* rule of obviousness that discovering the optimum or workable ranges necessarily involves only routine skill in the art, as alleged by the Examiner.

Therefore, Applicant respectfully submits that the grounds of rejection are unsupported for at least these additional independent reasons.

Third, the issues addressed by the court in In re Aller are entirely different from the pending claims and, therefore, In re Aller is inapplicable. In contrast to the claimed rolling sliding parts, wherein an occupation ratio is set from 90% or more to less than 100%, and wherein the occupation ratio is calculated by dividing a sectional area of a virtual plane in a plane direction at a portion that is positioned at a depth of 2.0  $\mu\text{m}$  from the outermost surface position by an area of an overall surface of a portion that contacts the other member (as recited in claim 1), In re Aller addressed claims directed to a process for the production of carbolic acid and merely held that “[n]ormally, it is to be expected that a change in temperature, or in concentration, or in both, would be an

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<sup>3</sup> In re Aller, 105 USPQ 233, 235 (C.C.P.A. 1955).

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unpatentable modification.”<sup>4</sup> Claim 1 has nothing to do with changes in temperature or concentration of a chemical process and, thus, In re Aller is not applicable.

Hence, Applicant respectfully submits that the grounds of rejection are unsupported for at least these additional independent reasons.

Applicant respectfully submits that the grounds of rejection for claims 2-3 are also unsupported for at least reasons similar to those already discussed above regarding claim 1.

Finally, Applicant respectfully submits that claims 4-30 are patentable at least by virtue of their dependency.

Accordingly, Applicant respectfully requests that the Examiner withdraw all of the above rejections.

**Conclusion:**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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<sup>4</sup> *Id.*

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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**65565**

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